WESTERN CLOUD.

While the eastern tornado was by far the larger and more destructive, it was not seen by nearly so many people as was the western cloud. (Figs. 1, 8, 9–11.) It was this spectacular western funnel which practically every one was watching while the eastern funnel formed and cut its destructive path through the southwestern portion of the county.

The wind from this cloud was first felt in contact with the ground at a point about 6 miles northwest of town, where some farm buildings were damaged. Its next important destruction was about 3 miles farther south, at the State school for the negro deaf, dumb, and blind. At this institution the industrial building, the laundry building, and a dormitory were destroyed. Moving in a southwestern direction and along a line practically parallel to the path of the eastern cloud, it next struck at Deep Eddy on the river's bank. At this point considerable property damage was done and two persons injured. Lifting a large volume of spray high into the air as it went, the whirl crossed the river, cut a path about 25 yards wide through the timbered hills, and eventually disappeared to the southwest. The path of this funnel while in contact with the ground was about 3 miles to the west of, and practically parallel to, the eastern funnel.

SOME OBSERVATIONS MADE ON THE ORIGIN, GROWTH, AND DISAPPEARANCE OF THE TORNADO WHICH PASSED WEST OF AUSTIN MAY 4, 1922.

By PAUL T. SEASHORE.

[University of Texas, June 14, 1922.]

While seated by a north window in Breckenridge Hall at the University of Texas on the afternoon of May 4 I became aware, due to the rumbling of thunder, of an accumulation of clouds in the north and northeast. On account of the heat of the early afternoon and of the knowledge that we were in an area of low pressure I thought it perhaps advisable to watch these clouds for symptoms of tornadic disturbances.

The clouds approached quite rapidly and seemed to be traveling in a southerly direction, perhaps slightly west of south. The approaching clouds were scarcely 5 miles away when I first became aware of the tornadic formative disturbance. In a position nearly due north a ragged edge, or that part which appears to an observer as being the bottom of the cloud had in one place dipped lower and had assumed the shape of a V with a slender threadlike appendage swinging from the bottom. This smokelike wisp was continually being drawn up into the larger V-shaped body, staying there for the space of a second or two, and then trailing down to the earth again, swinging to the right and to the left. This phenomenon was continued for possibly two or three minutes, and then the V-shaped body with its appendage disappeared.

After being absent for about the same length of time that it had been present, the body reappeared as before, only it had grown larger and had shifted from north to a position a few degrees west of north. Directly above this minature tornado small fragments of clouds were flying here and there with an irregular motion, confined, it seemed, however, to a certain area horizontally but not vertically. From this irregular boiling there gradually grew a regular movement, which was counterclockwise and assumed the shape of a narrow, slightly tapering cone inclined at an angle of about 30° with the horizontal. The small V-shaped body was drawn up into the larger cone, but the threadlike wisp of the former remained and was seen to grow larger, attach itself to the tip of the larger cone, and extend vertically to the ground. It remained on the ground for a few seconds and then drew up to a position about midway between the cone and the ground. The tornado at this stage was approximately north 25° west from my position. As the rapidly whirling gray cone passed to the west it assumed a more vertical position and appeared to grow slightly larger. Fragments of ragged clouds could be seen drawn into its vortex. After the cone had passed to the southwest of my point of observation it became funnel-shaped and again seemed to dip toward the earth. It now gradually broadened out, became bell-shaped and disappeared in a heavy rain.

This tornado was followed by a cloud having a bluish green color. The whirling cone itself had a grayish color until it became obliterated by the rain.

TORNADO FREQUENCY IN KANSAS.

By S. P. PETERSON, Meteorologist.

[Weather Bureau, Wichita, Kans., May 18, 1922.]

The following table has been compiled from the readily available records of tornadoes in Kansas so that there may be a clearer conception of the frequency of occurrence of tornadoes in that State. The records upon which the table is based are compiled from Mr. S. D. Flora's article on "Tornadoes in Kansas," published in the MONTHLY WEATHER REVIEW of December, 1915, and from the records of tornadoes found in the *Monthly Climatological Data* for Kansas for the years 1916 to 1921, inclusive, published by the Topeka Weather Bureau office, the *Climatological Data* having been carefully scanned for all records of tornadoes contained during that period. The total, apparently quite complete, records of tornadoes cover a period of 30 years—from 1874 to 1887, 1889 to 1896, and 1914 to 1921, inclusive. When tabulated we get the following results, showing the total number of tornadoes that have occurred in the various months during the period of record, from which is computed the average monthly frequency and the average number of tornadoes that may be expected to occur in Kansas per year.

TABLE 1.—*Tornado frequency in Kansas, 30 years' record (by months).*

	Total.	Average monthly frequency.
January	0	0.00
February	1	.03
March	19	.63
April	49	1.63
May	84	2.80
June	60	2.00
July	18	.60
August	16	.53
September	10	.33
October	5	.17
November	3	.10
December	0	.00
Total for 30 years	265	
Average per year	8.8	8.8